BEEF'N'BACON

A bimonthly publication from Alberta Agriculture Regional Offices in Barrhead and Red Deer

CANADIANA

DEC 30 1992

Final Beef'N'Bacon

By Rob Hand

The first issue of Beef'N'Bacon was printed in October, 1985. It was initiated to help district offices extend livestock information to producers at a time when the district offices were heavily involved with explaining government programs. A survey called the Heffering study had shown that newsletters were an effective method to get information to producers.

The introduction to the first newsletter read, "It is not our intention to explain in elaborate detail about the subject matter presented. Instead, we hope to spark your interest." Indeed, we hope that we did spark your interest.

It has been mailed to approximately 3500 producers over the last seven years. The articles were interesting to write. Most topics were based on questions coming from the producer.

This is the last issue of Beef'N'Bacon. We appreciated the feedback from time to time and anticipate we will be discussing topics with you in the future. Newsletters are effective methods to distribute information. There are however several newsletters coming from the district offices where similar information to that included in Beef'N'Bacon can be added.

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FOOD FOR THE NINETIES; CANADA'S FOOD GUIDE TO HEALTHY EATING, 1992

by Aileen Whitmore

Canada's new food guide has just been released. It is intended to help Canadians take better care of their nutritional health. The release is very timely because a 1992 Grocery Attitude of Canadians Survey indicates that we are more interested than ever in the topics of nutrition, health and eating sensibly.

The new guide encourages us to:

'Enjoy a variety of foods from each group every day.' - The guide is arranged in rainbow fashion with each of the four arcs representing a food group - grain products, vegetables and fruit, milk products and meat and alternatives. You need foods from each group because each group gives you different nutrients. You also need to choose different foods from within each food group to get all the nutrients your body needs.

'Choose lower-fat foods more often.' - Most people eat too much fat. Eating more breads, cereals, grains, vegetables, fruit, peas, beans and lentils will help you cut down on fat.

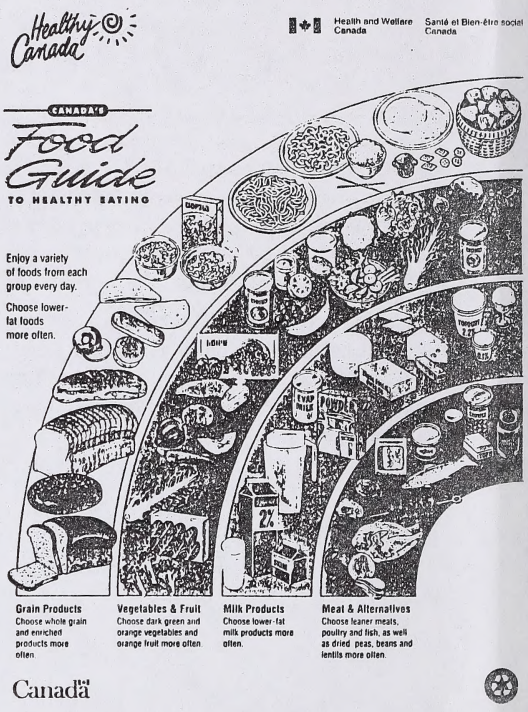
Each of the 4 food groups includes foods that contain fat. Choose lower-fat foods from each group every day. When you select foods higher in fat, eat small servings. By budgeting the amount of fat in your diet you'll be able to enjoy the foods you love and eat well at the same time.

'Choose whole grain and enriched products more often.' - Whole grain products such as whole wheat, oats, barley or rye are suggested because they are high in starch and fibre. Enriched foods are recommended because they have some vitamins and minerals added back to them.

'Choose dark green and orange vegetables and orange fruit more often'. - These foods are higher than other vegetables and fruit in vitamin A and folacin.

'Choose lower fat milk products more often.'- Lower-fat milk products have less fat and calories, yet still provide the high quality protein and calcium essential to healthy eating.

'Choose leaner meats, poultry, and fish, as well as dried peas, beans and lentils more often.'- Many leaner meats, poultry, fish and seafood choices are available to help reduce fat intake without losing important nutrients. Always trim visible fat and bake, broil roast or microwave instead of frying, and drain off extra fat after cooking. Foods like baked beans, split pea soup or lentil casseroles help lower fat while increasing your intake of starch and fiber.


Healthy Canada
Health and Welfare Canada
Santé et Bien-être social Canada
CANADA'S
Food Guide
TO HEALTHY EATING
Enjoy a variety of foods from each group every day.
Choose lower-fat foods more often.
Grain Products
Choose whole grain and enriched products more often.
Vegetables & Fruit
Choose dark green and orange vegetables and orange fruit more often.
Milk Products
Choose lower-fat milk products more often.
Meat & Alternatives
Choose leaner meats, poultry and fish, as well as dried peas, beans and lentils more often.
Canada

Beef'n' Bacon is published by Alberta Agriculture offices in Red Deer and Barrhead. More information on all articles is available by contacting your District Agriculture Office or the following:

Regular Conrtributors:

Red Deer
Robert Borg, Agricultural Engineer 340-5323
Dale Zobell, Livestock Specialist 340-5335
Marvin Salomons, Swine Specialist 340-5336

Barrhead
Rob Hand, Livestock Specialist 674-8249
Bert Dening, Swine Specialist 674-8247
Wayne Winchell, Agricultural Engineer 674-8254

Edmonton
Aileen Whitmore, Prov. Foods & Nutrition Specialist 427-2412

RATING THE MATING

by Bert Dening

Hand-mating, means being present when the boar mounts the sow and making sure the mating actually takes place. This is where it all starts and this alone can make or break your operation during times of low prices.

Observations

In the last year I've come across many producers who have slacked off when it comes to supervising the matings. The way producers handle the breeding job can be put into three categories.

Case #1 - Mr. Natural Hog Farmer (very green)

This is the case where sows are weaned and immediately put with the dry sows and boars. This is common in outside operations.

If and when the sow comes into heat, hopefully the boar mounts and breeds her. There are no records of breeding and no way of knowing if she even gets bred (except the few accidently observed).

From extensive computer records we know that this situation will produce a farrowing rate of 70-75%. This means, out of every 100 matings or boar contacts you will get 70-75% animals farrowing.

Case #2 - Mr. Semi-intensive Hog Farmer

This is the case where the first mating is supervised but then the boar and sow are left together for a day or two and hopefully she gets bred a number of times.

The problem is that the first mating is often too early (she is just in heat) and you're not sure when subsequent matings take place and if they take place properly. This scenario might give you an 80% farrowing rate.

Case #3 - Mr. Elite Hog Farmer (very intensive)

This is the case where every mating is supervised and the boar is helped if necessary. With this system boars can be rotated so she gets bred by different boars. Females are bred at the optimum time and all information is recorded. This system can result in a farrowing rate of 85-90% in order to maximize litter size and number of litters.

Outside Sows

Keeping sows outside is no excuse for not hand-mating. With a little thought to pen arrangement and gates, hand-mating can be achieved outside.

Each animal must be identified, preferably with double tags. The same management intensity and information recording is required outside as inside. The pay-off is an improvement in farrowing rate of 10% or more. Hand-mating has the additional advantage of providing an early warning to breeding problems.

Economics

The real pay back in hand mating comes with more litters/sow/year and larger more uniform litters. An improvement in farrowing rate of 10% from 75 to 85 would mean you could reduce your female inventory by 14% and produce the same number of litters per year or produce 14% more litters from your existing inventory. Either way, there can be a large improvement in profit.

Conclusion

It's generally accepted that anything that can be done to improve reproduction (pigs/sow/year) is economically about 5 times as important as other traits, such as carcass quality, growth rate, etc. Hand mating is a simple thing everyone can do which can have a huge pay back in improved profit.

Benefits of All-In, All-Out Finishing

by Marvin Salomons

Over the past 20 years pig producers have come to recognize the importance of all-in, all-out (AIAO) housing systems. For most operations AIAO has become the norm, especially in farrowing and nursery units. While a shift has occurred in these phases of production, continuous-flow finishing is still very common.

The objective behind AIAO production is to reduce overall exposure of pigs to disease organisms. Ironically the growing-finishing production phase contains the greatest potential for costly disease outbreaks. As finishing pigs consume the largest amounts of feed in the unit, AIAO growing-finishing makes sense if it reduces disease levels and allows pigs to maximize their lean growth potential.

How and Why AIAO Works

AIAO production requires that the entire barn or complete room in a multi-room unit be stocked at one time with pigs of the same size. These pigs are reared as a group and all pigs are marketed before any others are introduced. Between batches the barn or room is thoroughly washed and disinfected before being refilled. In a presentation on AIAO finishing at the 1992 Alberta Pork Congress, the late Dr. Al Leman recommended producers limit the number of feeder pigs occupying the same air space to 400 animals.

There are definite health benefits to AIAO pig production. In the Alberta Pork Production Course (1992) veterinarians Drs. C. Schipper and G. Finell state AIAO achieves four major benefits:

- Reduces the risk of infectious disease by preventing transmission from the previous occupants to the incoming pigs.
- Allows for depopulation and thorough cleaning of the room before new pigs are introduced.
- Reduces the need for antibiotics.
- Supports the five basic principles of disease control which are:

1) Remove the source of infection from the pig's environment.
2) Remove pigs from the contaminated environment.
3) Increase general disease resistance.
4) Increase specific immunity.
5) Reduce stress.

What Can be Gained From AIAO?

In a recently completed two year study Purdue University demonstrated the merits of AIAO finishing. Pigs raised AIAO from 40 to 235 lbs. outperformed pigs on a continuous-flow system **(Table 1).** Pigs raised in AIAO conditions grew faster, required less feed per pound of gain, and had lower death losses. Slaughter exams showed the AIAO pigs had fewer lung lesions and with a smaller portion of the lung being infected.

Table 1 Performance of AIAO Versus Continuous-Flow Pig Production (40-235 lbs)

	AIAO	CONTINUOUS FLOW
ADG (lbs)	1.73	1.54
Daily feed (lbs)	5.26	4.89
Feed: Gain	3.03	3.18
Days to 230 lbs	172	183
Mortality %	0	2
Pigs with lung lesions (%)	52	94
% lung infected	4	15

Purdue University, 1992

AIAO production can be more costly in terms of increased capital (wall and pit dividers) and labor costs (increased cleaning). This can be justified through better performance and reduced pig variation. Unlike in continuous systems tail-ender pigs must be marketed at the end of a cycle. This is often beneficial in that producers cut their losses early on these slow growing, unthrifty pigs. Herds with excellent health and management may not benefit as much from AIAO, however, the management advantages remain and if health problems arise, the AIAO system has clear benefits even for high-health herds.

How to Understand Barn Ventilation

Robert Borg

Is your barn too hot in the summer? Do the walls drip with moisture in the winter? Are the pigs suffering from bad air in the winter... high gas levels, dust? The key to a good environment in your barn is understanding what the ventilation system is supposed to do!

Summer Ventilation

Summer ventilation is simple... Imagine a barn full of heaters (one 80 kg pig = 100 Watts). Move outside air through the barn fast enough so that it doesn't have time to heat up by more than 2.5°C. Moving air, up to one room air change per minute in summer, will keep the barn from getting too hot.

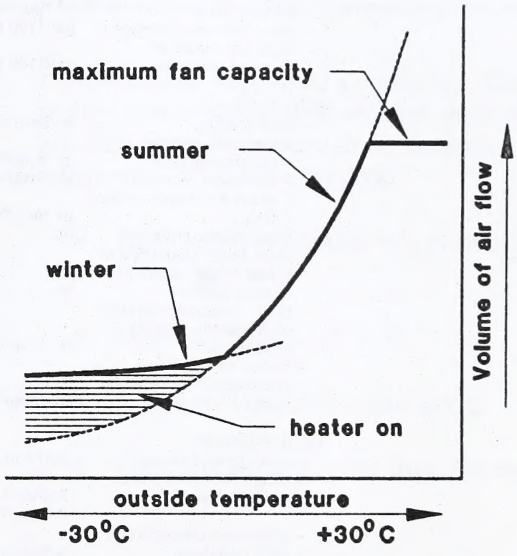
Control summer ventilation with thermostats. If it gets too hot the thermostat speeds up the fans or turns more fans on. With natural ventilation thermostats open the vent doors.

Winter Ventilation

In the winter you keep the barn dry by absorbing all the water produced by the pigs with dry outside winter air. As pigs breath out carbon dioxide, dilute gas levels by bringing in fresh air.

You can't control winter ventilation with a thermostat! All a thermostat can measure is the temperature... you are trying to control gas levels!

Install a small continuously running fan or use a fan control that has a minimum speed setting for the fan. Winter ventilation is proportional to the total weight of pigs in the barn. If the barn is too stuffy or wet, speed up the winter fan... it has to run all the time!



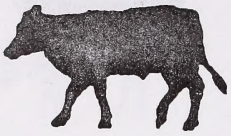
Air Mixing

It is really hard to bring in cold winter air without causing a draft on the pigs. Make sure you put in a good recirculation or air mixing system to stir the air before it reaches the pigs. If the pigs are small it is a good idea to preheat the air before it goes into the room.

Heating

With a continuous winter ventilation fan, there will be some point where the pigs can't keep the barn warm. This is shown on the graph where the winter or moisture control ventilation is more than the summer or thermostat controlled ventilation.

Turn on the heating system or, in the case of larger animals, lower the inside temperature and make the pigs convert more feed to heat. The key to a dry, fresh barn is keep the winter fan running, then add heat if the barn cools down.



Beef Cattle Housing and Equipment

by Wayne Winchell

PLAN 1000 REVISED 84:07

GUIDELINES FOR HOUSING BEEF CATTLE

Requirements	Unit	Cows and bred heifers	Calves to 500 lb	Yearlings to 750 lb	Heavy Feeders to 1100 lb
FEEDLOT without shed					
– lot area, if paved[1]	ft^2/head	80	40	45	80
– earth lot area[2]	ft^2/head	300	150	250	300
– bedded mound area[3]	ft^2/head	35	25	30	35
FEEDLOT with shed					
– paved outside lot area	ft^2/head	50	25	30	50
– earth outside lot area	ft^2/head	300	150	250	300
– shed area	ft^2/head	30	15	20	30
– shed min. clear height	ft	10	10	10	10
SLOTTED FLOORS, 100% slotted (2 to 2.5 ft^2/100 lb of live animal)	ft^2/animal	—	11	16	27
MATERNITY PENS, additional, not slotted	cows/10 × 10 ft pen	20	—	—	—
WATER					
– surface area	ft^2/100 head	4	4	4	4
– daily demand, average	gal/1100 lb live	10	10	10	10
– daily hot weather demand, average	gal/1100 lb live	20	20	20	20
FEED BUNK					
– limit feeding	in. length/head	26-30	18-22	22-26	26-30
– full or self-feeding					
– roughages only	in. length/head	8	6	8	8
– complete ration	in. length/head	6	5	6	6
– grain and concentrates only	in. length/head	3	2	3	3
– max. height at throat	in.	22	18	18	22
– max. reach (top edge of throat board to far bottom corner)	in.	34	24	30	34
– limit feeding roughages with electric wire or feed fence	in. length/head	20-24	12-16	16-20	20-24
– full or self-feeding roughages with electric wire or feed fence	in. length/head	10	6	8	10
FEED STORAGE					
– hay without silage	lb/(head.day)	25[4]	12[4]	15[4]	11[5] (6)[6]
– silage, 60% moisture, without hay	lb/(head.day)	75[4]	35	—	25[5] (13)[6]
	lb/(day.100 lb live)	—	—	4.5-5[7]	—
– grain and concentrate, 10% moisture	lb/(day.100 lb live)	1.5-2[8]	0.7-0.9	4.5-5[7]	7[5] (10.4)[6]
BEDDING STORAGE except for slotted floors	lb/(head.day)	5	3	4	5
MANURE STORAGE					
– with bedding	ft^3/(head.day)	1.2	0.6	0.8	1.2
– no bedding	ft^3/(head.day)	1.0	0.5	0.7	1.0

1 Paved lot slopes 2 to 4%
2 Earth lot slopes 4 to 8%
3 Typical slope at sides of mound 25%; sawmill chips and shavings are preferred to straw for bedded mounds.
4 Maintenance only
5 High forage: average ration intake 26.6 lb; based on 10% moisture content, feed intake 2.8% of 950 lb live weight
6 High grain: average ration intake 28.5 lb; based on 10% moisture content, feed intake 3% of 950 lb live weight
7 Grain may be substituted for hay @ 1:1.5 respectively.
8 Heifers only; grain should not be fed to cows.

Proper Vaccination Procedure

by Dale ZoBell

In the U.S., the beef industry has come under fire due to deep intramuscular scarring caused by improper vaccination procedures in meat of certain animal health products. It is not a food safety problem or issue but can result in trimming losses of certain cuts, which is an economic loss to the industry. Producers in Canada are, to the most part, very diligent in their use of animal health products. However, a little reminder, such as that offered by Al Edwards, consulting veterinarian with Kansas State University can do no harm. Here is his advice on needle know-how as reported in the publication "Feeder Performance" (Hoffman-LaRoche, spring, 1992).

1. Select the correct size needles. Use needles no larger than 16 gauge for any intramuscular or subcutaneous injection. A 14 gauge needle leaves too large a hole in the skin. And a 20 gauge needle is probably too thin, so it will break or bend too easily.

2. Keep equipment clean. Contaminated needles are more likely to cause injection site reactions or infections and can also transmit some diseases.

3. Injectable product labels recommend using a new, clean, sharp needle every time an animal is injected. If the needle has been dropped or bent, change it right away.

4. Keep cattle as clean and dry as possible. Mud, manure and even moisture on the skin can be pushed into the muscle by the needle and add to the tissue damage caused by an intramuscular injection.

5. Never inject clostridial vaccines into the muscle. All clostridials, such as 7- or 8-way vaccines, should be administered subcutaneously. The proper procedure for a subcutaneous injection is to use a short needle (1/2 or 3/4 inch) and insert it so that the product is deposited under the skin.

6. Administer an antibacterial intravenously, according to label directions. If you must inject an antibacterial intramuscularly, use no more than 15 ml per site. Be sure to allow ample withdrawal time before marketing.

Producers in Canada are, to the most part, very diligent in their use of animal health products.

7. Follow proper implanting procedure. There is plenty of evidence to show that implants are ineffective in cattle with implant-site infections. To avoid infections:

    - Keep unused implants in a covered container.
    - Disinfect implanting tools.
    - Insert ear tags before implanting.
    - Place the implant away from the ear tag.

8. Use products responsibly. Don't mix or use antibiotics or other products in ways not listed on the product label. Such practices may cause bigger problems than the one you're trying to cure.

MONITOR COW CONDITION

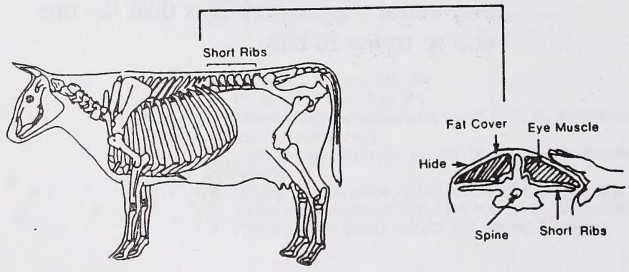
by Robert Hand

Hay has a built in insurance policy when fed to mature pregnant beef cows. The policy exists since hay will supply more nutrients than the cow needs throughout most if not all of the winter. Therefore, one expects few problems and if fed close to free choice intake, the cows will likely gain weight, deliver a vigorous calf and rebreed quickly. But hay is expensive and in restricted supply north and east of Edmonton.

Producers are extending hay supplies by restricting hay intake and or feeding alternative feeds such as straw and grain. A ration of 50% straw, 50% hay is adequate provided all cows get equal access to the restricted hay. But the insurance policy no longer represents full coverage. There must therefore be extra monitoring to ensure cow condition is maintained. That monitoring is best done through body condition scoring the cows periodically throughout the winter. Those times could be anytime the cows are confined such as at weaning, for vitamin injections or scour vaccines or lice treatment, and at calving. Visual monitoring is always useful but can be deceiving since cow conformation changes with pregnancy and skin thickness and hair coat increase with cold. By actually feeling the body condition with your hand, you can be more confident the cows are maintaining optimum condition.

Body condition scoring is the necessary tool to accompany extending the feed supply. Animals are scored from extremely thin (score = 1) to grossly fat (score = 5). To condition score place your hand on the loin area , fingers pointing to the opposite hip bone. With your thumb feel the fat cover over the ends of the short ribs as indicated in the figure. To maintain consistency from one time to the next, score the cows on the same side each time, preferably the cow's left side. The scores to remember are listed in the table. Note that the short ribs and the tail head provide the most information in assessing body condition score. These are areas where there is no muscle such that any fleshiness felt under the skin will be fat.

Figure 1 — Where to condition score



Body Scores

2. The short ribs can be identified easily when touched but feel rounded rather than sharp. There is some tissue cover around the tail head, over the hip bones, and the flank. Individual ribs are no longer obvious.

3 The short ribs can only be felt with firm pressure. The area on either side of the tail head now have a degree of fat cover which can be easily felt.

4 Fat cover around the tail head is evident as slight rounds, soft to the touch. The short ribs cannot be felt even with firm pressure. Folds of fat are beginning to develop over the ribs and thighs of the animal.

Rather than try to remember all scores, the proc need only remember the minimum score cows r to maintain. That score is a 2.5. Here the indiv short ribs can be individually identified but rounded and require firm pressure by the thumb felt. If unsure, feel over the hip and pin bones f cover and in the cavity beside the tail head. Fat l beside the tail head indicate the cow is at le score 3.

Condition scoring is fast, simple, and cheap and help manage the herd for optimum performanc that feed is neither underfed or overfed. Try it out sample group of cows or calves to become fa with the short ribs. Once understood, extending supplies will be easier since you now ha monitoring system. A factsheet explaining body dition scoring is available at your Alberta Agric District Office.

Other factors which have a big influence on condition are competition for feed and proper su mentation of vitamins and minerals. Talk to your company or nutritionist about ensuring the rati balanced. If feeding straw or any other feedstu the first time, get their opinion on its suitability.